FG/CTL amplifier
BA6305/BA6305F

The BA6305 and BA6305F are fast-response wave-shaping preamplifiers for use in VCR CTL amplifiers. They meet the fast REC mode to PB mode response required in VCR CTL amplifiers. The ICs contain a fast-response preamplifier (with precharge function) and a noise-rejecting hysteresis amplifier that converts the CTL signal to a rectangular-wave output. The hysteresis width can be switched between two levels to maintain the S/N ratio, and provide compatibility with various tape speeds.

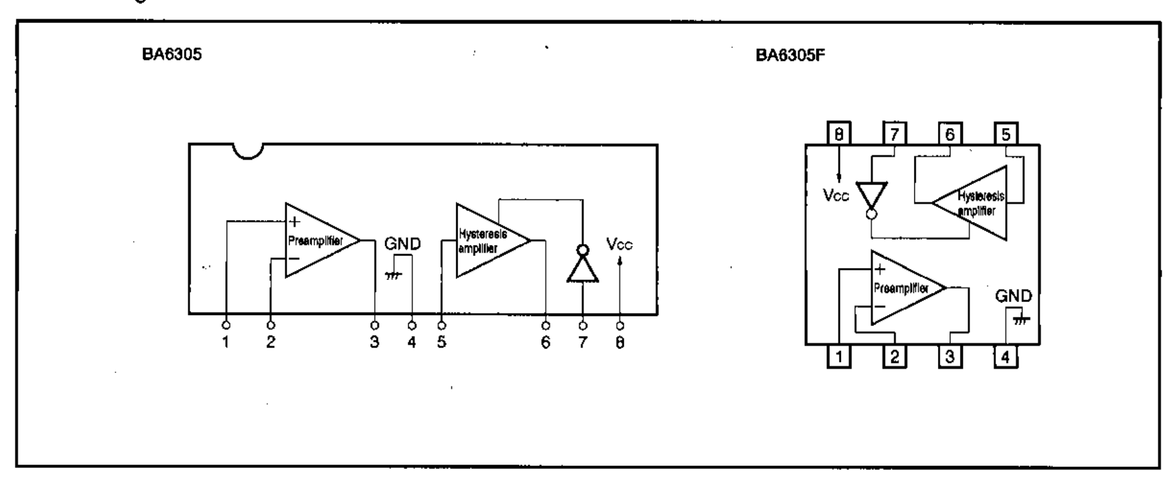
●Applications

VCR CTL amplifiers
VCR FG amplifiers
VCR DTP amplifiers
Other preamplifier and hysteresis amplifier applications

●Features

1)Fast response from strong input when recording to CTL signal playback when playing.
2)High gain.
3)Schmitt trigger circuit ensures high S/N ratio, and accurate hysteresis width and level.
4)The hysteresis comparator level can be switched to suit the CTL amplifier level.
5)Compact SIP 8 pin and SOP 8pin packages.

●Block diagram



●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Power supply voltage	Vcc	15	V
Power dissipation	Pd	400 *	mW
Operating temperature	Topr	−20~70	℃
Storage temperature	Tstg	−55~125	℃

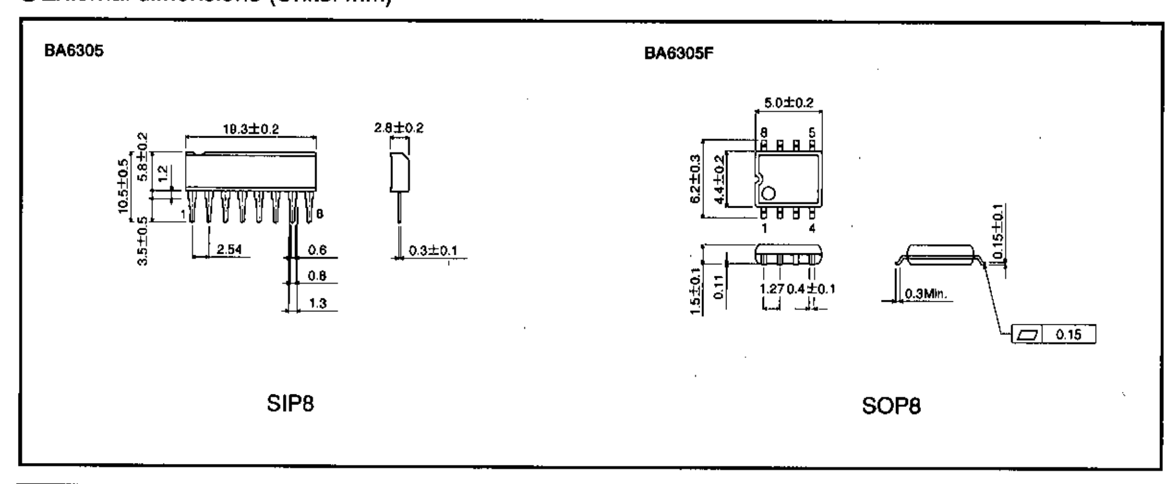
* Reduced by 4.0mW for each increase in Ta of 1℃ over 25℃.

●Electrical characteristics (Unless otherwise specified Ta=25℃ and Vcc=9V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating voltage	V_{CC}	4.5	−	13.0	V	−
Quiescent current	I_Q	0.6	1.5	2.6	mA	−
Preamplifier bias voltage	$V_{B\,pre}$	1.0	1.3	1.6	V	−
Small-signal preamplifier input resistance	R_{INS}	20	30	40	kΩ	V_{IN}=1.0V
Large-signal preamplifier input resistance	R_{EN}	2.1	4.4	9.0	kΩ	V_{IN}=5.0V
Preamplifier bias input current	$I_{B\,pre}$	−	30	300	nA	−
Preamplifier output level	$V_{O\,pre}$	2.0	2.4	−	$V_{p\text{-}p}$	−
Preamplifier open-loop voltage gain	G_{VO}	64.0	72.5	−	dB	R_{NF}=330kΩ
Preamplifier input conversion noise voltage	$V_{N\,pre}$	−	3.4	12.0	μV_{rms}	DIN Audio R_g=2.2kΩ
Schmitt circuit input bias potential	$V_{B\,hys}$	1.6	2.0	2.4	V	−
Schmitt circuit hysteresis width I	V_{hys} I	±70	±90	±130	$mV_{o\text{-}p}$	−
Schmitt circuit hysteresis width II	V_{hys} II	±200	±250	±360	$mV_{o\text{-}p}$	−
Schmitt circuit output level	V_{ohys}	5.1	6.6	−	$V_{p\text{-}p}$	R_L=20kΩ

The switching time from REC mode to PB mode is 1 sec. (Max.), and the power on start up time is 3 sec. (Max.).

●External dimensions (Units: mm)



FG/CTL amplifiers
VCR components